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Results Of Researches On Strategies Of Teaching/Learning/Assessment Based On Interactive Learning Methods

[a]Ramona Lile, [b]Gabriela Kelemen*

[a]"Aurel Vlaicu" University from Arad, Bdul revoutiei, nr.77, Arad, Romania
[b]"Aurel Vlaicu" University from Arad, Faculty of Educational Science, Psychology and Social Work, E.Dragoi str., nr.2-4, Arad, Romania

Abstract

The literature in this field records many methods and theories of active learning, aimed at fostering critical thinking, strategies for applying the methods of active-participatory methods, methods of stimulating the students ' creativity, activation methods of the multiple intelligences. All these aspects are studied both from the perspective of students, teachers, and specialists in researching educational phenomena. This implies knowledge of the problems dealt by specialists in prestigious publications with wide visibility. These concerns follow, in fact, the motivation of students to a bending more interested towards knowledge, for a deeper understanding of the field of study, an analysis of the critical perspective of the concepts. Learning strategies based on modern methods gives the opportunity to realize the relationships between knowledge, transferring information, inferences, but a cognitive stimulation of independence in learning and an activation of the student's self-confidence.

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Keywords: researchers; methodological approach; building knowledge; active learning

1. Introduction.

Our interest is heading towards the identification of items listed with a high impact factor in which we encounter such an approach, with the task to elaborate an argumentative essay. Our essay is based on the study of several articles that address the issue of introducing of the active participative methods (Hannele Niemi, 2002, Pages 763-780) to optimize the role of learning students through these educational methods. Our whole approach has been

* E-mail address: ramonalile@yahoo.com; gabrielakelemenuav@gmail.com

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based on several publications and academic journals in the ISI. When selecting the articles I searched for articles using some keywords such as: methods, active-learning methods, critical thinking. I selected the following articles: Procedia Social and Behavioral Sciences 2 (2010) 2409-2413, Procedia-Social and Behavioral Sciences 29 (2011) 1115-1122, published by ELSEVIER, and articles published by Pub-Med, US National Library of Medicine National Institutes of Health and Academic Medicine, the Journal of the Association of American Medical College.

Effectively learning. Analyzing the content of articles (Included in Bibliography) we found that the vast majority is oriented towards finding the most appropriate ways for effectively learning from students. Articles emphasize the idea that using active methods, students are becoming more interested and more efficient in learning. Whether it comes to an article that belongs to a magazine focused on education, with a strong orientation towards educational methodology, or a magazine of science, interest in these learning techniques is one constant and pervasive, which is why we have selected articles from other fields and not just those belonging to the sciences. We were interested in the recently published articles, as well as the oldest, to make an analogy between ideas already enshrined, vis-à-vis the current concept of modernization of educational methods. We note a concern of scientific research toward identifying ways to contribute to the efficiency of learning in students, a tendency toward critical thinking techniques, by highlighting the effectiveness of the application of active learning methods identified in the literature that formed the basis of the findings described below. Taxonomic classification of the objectives according to the typology of knowledge which are intended to be appropriated by the students, and applied knowledge, we proceeded to the predicative identification in the content and methods of teaching/learning/assessment-oriented optimization of learning in students. In the first category of methods we selected *Problem based learning* (PBL), and for an in-depth knowledge of learning (declarative, conceptual) have approved the use of learning technology or technique, spiral steps in promoting learning.

Peter Schwartz's article, *Problem-based Learning: Case Studies, Experience and Practice* treats the impact *of problem based learning* (PBL) on learning, made an analogy with the traditional methods of learning. The author wished to emphasize the role of PBL in assimilating knowledge, specialized skills and training, differentiated levels or cycles of learning. For starters, the author explains what this method is; or rather should we call it learning technique. PBL method is a method of active learning in which students are encouraged to create and solve problems in groups. In fact, this technique is based on the principle of resolving the problems as the starting point in understanding, and the integration of new knowledge into information already accumulated baggage. In most cases it starts from a concrete situation. This issue is discussed and analyzed by the group of students who may bring a number of possible resolved directions. Discussing on the edge of each of the directions, the need for a particular task, so that learning objectives are formulated which will be carried out through individual study, in accordance with a specified bibliography. Each student will draw upon the study conducted a report which will be presented in front of colleagues.

The scientific method PBL promotes a different kind of learning than the classic, in which learning was based on the transfer of knowledge from teacher to student and the active involvement of students in their own learning process. Focusing on the issues and discussion group stimulates students to acquire relevant knowledge and skills by actively and independently, the accent is centered on individual motivation (Graham Gibbs and Alan Jenkins, 1992, pp.99). It stimulated thinking laterally type within which knowledge is produced through the rediscovery of the information step by step (Edward De Bono, 1973, pp.76).

Within the PBL method there is a stage of preliminary discussions, this stage includes five steps and aims at updating and training of already assimilated knowledge, but also the assimilation of new info, then processed into knowledge. To follow these steps the teacher must start from a situation or concrete example prepared in time. By following this algorithm students can:

- clarify concepts and also explain all the concepts we use in the context of the problem posed;
- define the problem: at the begining the students suggest different solutions, formulate possible definitions, then extract the essence of the task making a concrete problem, clearly expressed;
- analyze the problem by storming ideas: students remember information they hold, highlights the relationship with new problem by identifying issues and relevant explanations to formulate alternative explanations, the possible hypotheses for solving the problem;
- categorize consistently the ideas, explaining the comments or gaps in classification;

- formulate learning objectives based on their knowledge and the explanations will be formulated a set of learning objectives specific to that problem. It will take into account that all learning defined objectives to be formulated clearly, concrete and coherent.

Within the PBL method, the teacher stimulates students intellectually; he is just an external coordinator, a supervisor who acts as a leader of the involvement of students in their own training. Thus, the teacher within the PBL method, stimulate the learning process of the students through active listening, communication, formal and informal, open-ended questions; promote cooperation between members of the group; It provides information only when students are not able to rediscover themselves, but with short explanations, practical examples, exposure of similar cases. As a rule, the professor intervenes only when the group finds itself in difficulties and apparently fails to find the solution of the problem, that's why he seeks to lead the group of students, so as to steer him toward a concrete task, offering instruction only when groups of students do not find the direction to the correct procedure; the teacher can interfere with some collateral information to lead students toward the right direction. Also, the teacher's attention must move towards that element of group cohesion, but to pay attention to each student as an individual, monitoring everyone's contribution, so that participation should be fully active from all students. Being concerned about the process of active learning, the teacher observes and analyzes the performance of each stage following the effects of positive and negative ones in the way in which the group operates.

The teacher is the catalyst of the group, he pursues the consequences of the actions of the students, and he provides the feed-back. The information of the members of the group about the positive and negative aspects of the preparation of the content of individual talks and implementation steps in learning enhances students' training in task, leading to an understanding of logical, conscious of their operation by the students in the group and its productivity. PBL implement elements that generate knowledge and understanding through a sequential development of individual cognitive skills made available to members of the group, for the common interest. Then, in the didactic approach of the technique, a stage of self-study, which means that each member of the team to work on the problem that may arise, individually. Every student is now on his own, starting from learning objectives formulated in the team, will aim to acquire the knowledge which are missed, the information that you seek, you will find within a clearly defined and respected, in accordance with a specific bibliographies. Each team member has an individual study results in the form of a short and concise report, a critical analysis of the actions of the group.

According to the PBL method, individual study respects the following stages:

- programming: every student knows the problem, he chooses the means, solutions, settlement times and stages;
- selecting sources: based on key words student seeking information;
- study sources: according to issue each student draw from own sources and information be subject to critical analysis;
- the preparation of the report: after a self-criticism, according to the notes and sources quoted the student draws up the report;
- presentation of the report in a brief and synthetic form;
- critical interpretation of the group.

Involving students actively and independently in learning he resorts to the processes of analysis, reflection, creation, application/creation, understanding, consolidate, generalization and evaluation. The learning process is one that contributes to the development of interactive critical thinking, internal cognitive structures that determine correlations between new knowledge, knowledge transfer, cognitive inferences. Individual study and group work blended with lead to the development of techniques and procedures of creative resolved problems based on preexisting knowledge, through their integration in the system of knowledge. PBL determines the development schemes of critical, innovative and exploratory thinking.

Teaching-learning method based on the *problematization:* (PBL-problem-based learning)(Dorothy H. Evensen, Cindy E. Himelo, 2000, pp.75) through that stage of final talks, stage which involving discussion, debates on those found in the study individually and subjected to critical thinking of the group has an important role in enabling the group to develop confidence in their own students. Thus the final talks are taking place which shall be presented in a way summed up the results of the study. Having as its starting point learning objectives established, identified, solutions are presented to formulate new questions, locate any obscurities or erroneous information, so that the student is prompted to appear before colleagues clearly and concisely what he studied, citing sources for

information, in such a way that the information presented to have a clear relationship with the study. This step will determine the students to make presentations as original as possible, to bring out the personal contribution, and to provide original and compelling information.

As in any learning process and in the PBL method the evaluation is a complex process that involves measuring and quantifying the knowledge, skills and progress of students. You can do that from any type of evaluation using different modalities:

- Tests at the end of each chapter/module/course;
- Works;
- Presentations;
- Research proposal.

Another method identified in the above mentioned publications is the learning method in the spiral which occupies large areas in academic pursuits. In terms of teaching and this method has been placed in the context of the effects they produce on the effectiveness of learning in students. Spiral learning involves a learning based on distance, once mastered the first step follows another more evolved and so forth. This method has 11 steps and 15 goals. In the article the author studied (Fahimeh Veladat, Fatemeh Mohammadi, 2011, p.46) in comparison this method, (more correctly should we consider this technique as well, but we respect the decision of the author) with traditional methods, to emphasize the role of accelerated learning of this technique. Research technique used is a pragmatic one, and research methods are empirically based. It has been shown that such learning spiral method or the method of small steps or stairs is one with positive effects on the uptake of knowledge to students. This method creates new opportunities to integrate the learning experiences that facilitate active learning circumstances of learning awareness, stimulating creativity and autonomy in accession to knowledge. Spiral learning technology, instructional model, promotes those techniques that stimulate learning from students, so as to achieve the objectives proposed by valuing all aspects (including socio-cultural) of the matters dealt with and the development of personal skills of the students. This method takes into account the human being's relationship with the natural world; in this respect it looks the appearance that man reaches to knowledge through the five organs of sense and also take into account the appearance that each human being is an individual, a distinct personality with their own needs, of which every teacher must be aware and act as such in his approach to teaching in the classroom.

The results of researches of the articles in question confirms that the methods used by teachers in different wine research to improve teachers' teaching style. The purpose of the research that highlights the items mentioned above helps teachers, especially those who are the beginning of their career to understand the impact that certain methods they have on students learning at different ages and cycles of learning. Some methods are applicable even at ages early education, others only at older ages. Good practices it is necessary to be known in order to be applied differentially, depending on the specifics of the learning cycle. Reference is made in the literature to be included in the curricula of educational methods of knowledge such as: methods of critical thinking and modern methods of stimulating creativity because it produces positive effects and consistent in terms of assimilation and fixing skills, skills, abilities (skills, know-how) (Peter Schwartz, 2001, pp.58) to students. But some are critical remarks regarding the exclusive use of these techniques. Therefore, the authors concluded that these new mentioned techniques are useful when integrated within a learning activities are used concurrently and classical methods of learning. Using classic methods just lead to boredom, and conformism, but using active methods not only produces a particularly successful on the acquisition, the acquisition of knowledge, descriptive, declarative operating logics, does not lead to a priori knowledge. Traditional-interplay methods of modern methods is one of complementarily, a correct, efficient learning cannot be made without explanation, observation, interaction and direct application. Therefore, researchers concerned advocates for appropriate integration into the process of education of traditional and modern methods, depending on the requirements of the moment of learning.

2. Conclusion

Studying the problem we can affirm that students learn best when participates actively in the knowledge, personnel involved in learning, combining theory with practice, critically analyzes the information, remove personal inadequacies by means of research and applied what they studied theoretically. Strong argument in favor of modern methods and techniques is that the students were more open towards academic curricular and extracurricular

activities have been engaged in various actions being teachers more confidence in them and open in the presence of their teachers.

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